

**IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF VIRGINIA
ROANOKE DIVISION**

**JEFFREY S. HODGES,
TOMMY LEE BONDS, and
JOHN PAUL SPANGLER,**

Plaintiffs,

v.

**FEDERAL-MOGUL CORPORATION,
et al.,**

Defendants.

Civil Action No. 7:12cv00362

**FEDERAL-MOGUL’S MEMORANDUM IN SUPPORT OF ITS MOTION TO EXCLUDE
THE TESTIMONY OF MARTIN SCHLOSS AND PATRICK MCGINLEY**

Patrick McGinley and Martin Schloss base their fire cause and origin opinions on unreliable, physically impossible testimony that they admit is incorrect. Both McGinley and Schloss have failed to conduct their investigations according to the scientific method, as is required in National Fire Protection Association 921. Because the methods employed by McGinley and Schloss do not meet the standards for methodology set out in NFPA 921, their testimony is unreliable and should be excluded under *Daubert*, *Kumho Tire*, and Federal Rule of Evidence 702.

I. SUMMARY OF FACTS¹ AND RELATED EXPERT ISSUES

This is a product liability case stemming from an explosion that occurred at Federal-Mogul Corporation’s Blacksburg plant on December 31, 2010. Plaintiffs have designated two expert witnesses to give fire cause and origin opinions: Patrick J. McGinley and Martin Schloss. **Exhibit 1**, Plaintiff Jeffrey Hodges’ Rule 26 Disclosures.

¹ An extensive summary of undisputed facts is located in Defendant Federal-Mogul’s Memorandum in Support of Summary Judgment (Dkt. No. 78), previously filed in this matter. Federal-Mogul hereby incorporates that summary, and intends here to provide a more limited summary of facts and issues pertinent to expert investigations and opinions.

Both McGinley and Schloss have opined that the origin of the fire and explosion at issue in this case came from the external aluminum dust collection structure known as a “baghouse.” **Exhibit 2**, Patrick J. McGinley Report, 5–6; **Exhibit 3**, Martin Schloss Report, 25-28. While they purportedly base it on a totality of facts, McGinley and Schloss could only point to two specific pieces of evidence to support this theory: (1) Jeffrey Hodges’ testimony that he could see a fireball coming from beyond the flame arrestor or “back-draft damper” and (2) the footage from a security camera that shows at least one explosion occurring at the Federal-Mogul facility. **Ex. 2**, 5–6; **Exhibit 4**, Martin Schloss Dep., 72–73, November 11, 2013. Both Schloss and McGinley claim they found Hodges’ testimony to be reliable. **Ex. 4**, 72; **Exhibit 5**, Patrick McGinley Deposition 49–50, Nov. 12, 2013. However, the only testing either of them did to verify Hodges’ statement was when Schloss looked back at the video footage, “so by using that with his reaction, I determined that the explosion had taken place . . . in the bag house, not in the ductwork, the initial explosion.” **Ex. 4**, 72.

Hodges’ Testimony:

Jeffrey Hodges testified at deposition that immediately prior to the explosion he was standing at the mouth of the duct facing the external wall. **Exhibit 6**, Jeffrey Hodges Deposition 56, May 23, 2013. He had a flashlight in his hand, and they had just attached the 8’ PVC pipe extension to the end of the vacuum hose. He states he could see roughly three to five inches of aluminum dust that lay at the bottom of the 14-inch diameter duct. Hodges states the dust covered the bottom all along the length of the duct. He testifies that as he looked 30 to 40 feet down the 14-inch diameter duct, he could see the back-draft damper which was partially propped open by the aluminum dust buildup. *Id.*, 39-41. Hodges claims the damper was hinged at the middle. *Id.*, 101. He also claims he saw a fireball emanating “past the damper” and coming towards him, and “the next thing I know I’m on fire.” *Id.*, 40. Hodges claims that he could see over the top of the damper

device (*Id.*, 101), and that he saw the fireball beyond the damper as it came toward him (*Id.*, 41.) Notably, Hodges admits the entire scenario described took place in less than a second. *Id.*, 42.

Hodges' description of the damper is entirely incorrect. The damper hinges at the top, above the duct, and the flap extends down to cover the cylindrical duct entirely.

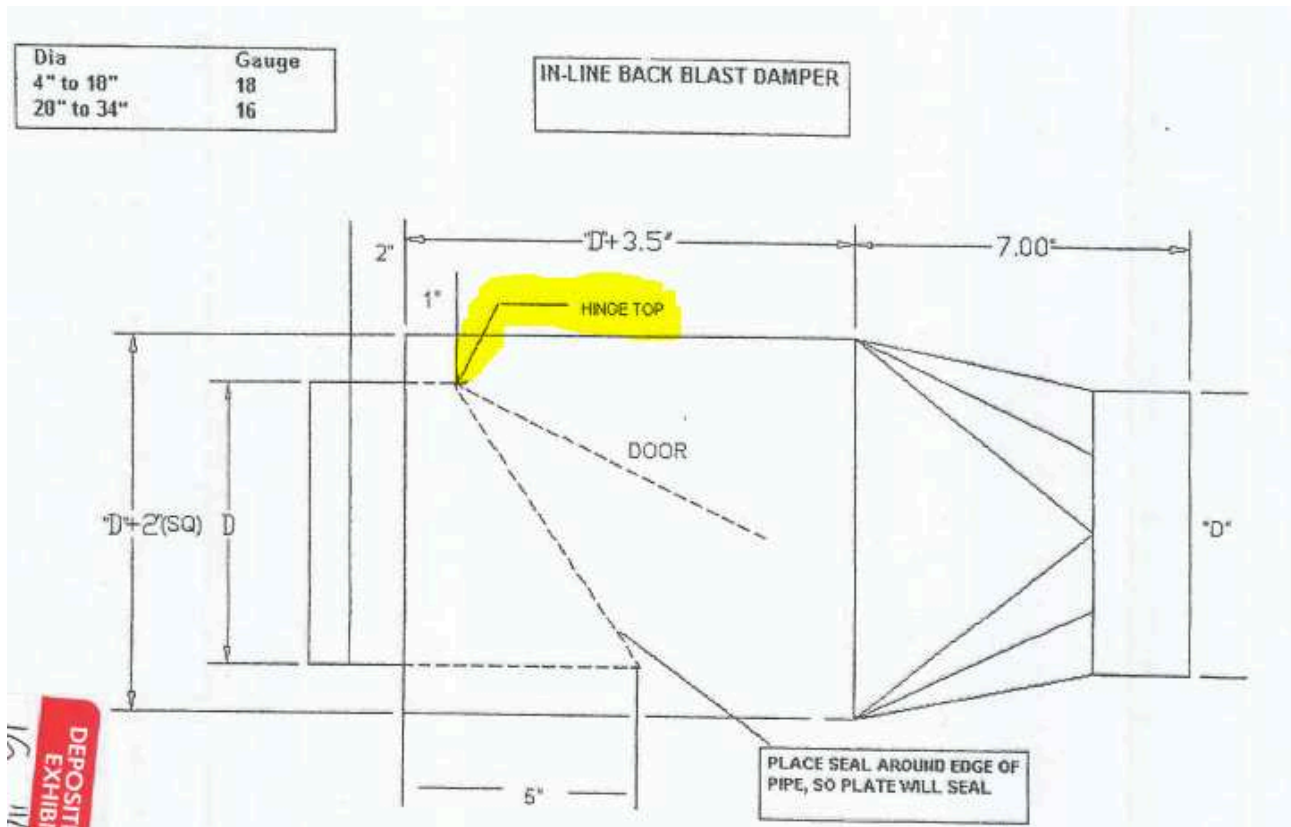


Exhibit 7, Diagram of the damper (edited to highlight the hinge). There is literally no way Hodges could have seen a fireball coming over the top of the damper, because the damper hinges at the top, above the actual duct. His description of the damper as hinging at the middle is also wrong, for the same reason. His description actually is more consistent with a description of the aluminum dust buildup itself rather than the damper.

Even if the Court disregards the necessary but physically impossible inference that the fireball came over the top of the damper, there is still no physical way in which his description can be reliable. If the damper indeed was propped open by dust, which he describes as being at one level along the length of the duct (**Ex. 6**, 41), the obstruction of the opening would also block his

view. Moreover, he was looking down the length of a 40-foot duct that was only 14 inches in diameter. The damper would have to be completely open in order for him to be able to see past the damper, even if the aluminum dust buildup was somehow invisible or transparent. There is simply no way Jeffrey Hodges could have seen a fireball coming from beyond the damper, even if his description of the damper were not completely wrong.

Video Footage:

Contrary to the representations of Schloss and McGinley, the security video footage indicates that the explosion began inside the Federal-Mogul plant, not in the external baghouse. Dr. Richard Roby of Combustion Science Engineering performed a frame-by-frame analysis of the video footage. **Exhibit 8**, Richard Roby Report, 10–19; **Exhibit 9**, Richard Roby Aff. ¶¶s 14–16. As he points out, the first flash that occurs in the video shows a blinding light inside the plant, strong enough to white out the camera screen. **Ex. 8**, 10–19. The flash of the initial white-out appears to emanate from the left side of the camera—where the Plaintiffs had removed a section of the duct. *Id.*, 15. The garbage can in the lower part of the screen gives a shadow to its right, indicating the light source is on the left side. *Id.*, 14, Fig. 6. If the initial flash was coming from outside the building, the only part of the camera’s screen that would have been whited out would be the doorway to the vestibule, not the entire screen. The notion that the light from an outside explosion would somehow wrap around the vestibule, infiltrate the doorway and spread across the entire screen of the camera, defies physics. **Ex. 9**, ¶¶s 14–16.

As also pointed out in Roby’s report, the secondary blast in the baghouse (which occurs after the initial white-out) explodes the glass pane of the outer vestibule door, and glass shards appear for the first time in the vestibule. **Ex. 8**, 10–15. If the first blast had occurred in the outside baghouse, the shards would have been visible immediately after the first blast, not later in the footage as they do in fact appear. The security video footage can’t support the claim that the initial blast occurred outside the building.

Once McGinley and Schloss reach the conclusion that the origin of the explosion was the baghouse itself, they face a difficult question as to the ignition's cause. All evidence in this case shows that the baghouse was shut down and inert prior to and during the explosion. As a result, McGinley and Schloss come to the conclusion that the cause of the explosion was probably a spontaneous combustion caused by the interaction of aluminum dust and water vapor condensate in the baghouse.

Both Schloss and McGinley have arrived at their cause and origin opinions without leaving a bit of evidence as to how they got there. Both Schloss and McGinley fail to provide any mathematical calculations, drawings or otherwise reproducible methodologies in reaching their cause and origin conclusions, and both admitted that they did no testing to disprove their hypotheses as to cause and origin. **Ex. 4**, 87, 148, 158, 161, 202, 208; **Ex. 5**, 45, 46, 96, 97, 98, 122, 132, 134-136, 172. Such a lack of methodology goes to the heart of their testimony, and makes it impossible to test their conclusions for reliability or accuracy.

II. LAW AND DISCUSSION

A. STANDARDS FOR ADMISSIBILITY OF EXPERT TESTIMONY

The general standards for admissibility of expert testimony are set out in Federal Rule of Evidence 702 and explained by *Daubert* and *Kumho Tire*. Whether expert testimony and methodology are reliable is under the wide discretion of the trial court. *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 152, 119 S.Ct. 1167, 1176, 143 L.Ed.2d 238, 253 (2002). Though “[v]igorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence,” *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 596 (1993), where the expert's testimony is not testable or has not been tested, courts will exclude the proffered testimony. *See Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 43 F.3d 1311, 1319 (9th Cir. 1995) (“We've

been presented with only the experts' qualifications, their conclusions and their assurances of reliability. Under *Daubert*, that's not enough.").

As for the exact requirements of Federal Rule of Evidence 702, the Rule states as follows:

If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert . . . may testify thereto . . . if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case. Fed. R. Evid. 702.

The 2000 Advisory Committee Notes to Rule 702 state a number of reliability factors, including:

(1) whether the expert's testimony grows naturally and directly out of research he has conducted independent of the litigation, or whether the opinion was developed expressly for the purpose of testifying, (2) whether the expert has adequately accounted for obvious alternative explanations, and (3) whether the expert is being as careful in his litigation consulting work as he would be in his regular professional work.

The Court first determines whether the expert is qualified to give an expert opinion; if the answer to that question is yes, the Court then determines the reliability, sufficiency and relevance (or "fit") of proposed testimony, as well as the related question of whether the proffered testimony will be helpful to the jury. *Daubert*, 509 U.S. at 591. Both the Supreme Court and the Fourth Circuit impose the burden of establishing reliability of proffered expert testimony on the proponent of that testimony. *Cooper v. Smith & Nephew, Inc.*, 259 F.3d 194, 199 (4th Cir. 2001) (citing *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 592 (1993)). When the testimony of the expert has been prepared for the purposes of the instant litigation, the party offering the testimony must provide "objective, verifiable evidence that the testimony is based on scientifically valid principles." *Daubert v. Merrell Dow Pharms*, 43 F.3d at 1317–1318 (quotations omitted).

In applying its gatekeeping function, the trial court's objective is to ensure that the expert "employs in the courtroom the same level of intellectual rigor that characterized the practice of an expert in the relevant field." *Kumho Tire v. Carmichael*, 526 U.S. 137, 152, 119 S.Ct. 1167, 1176,

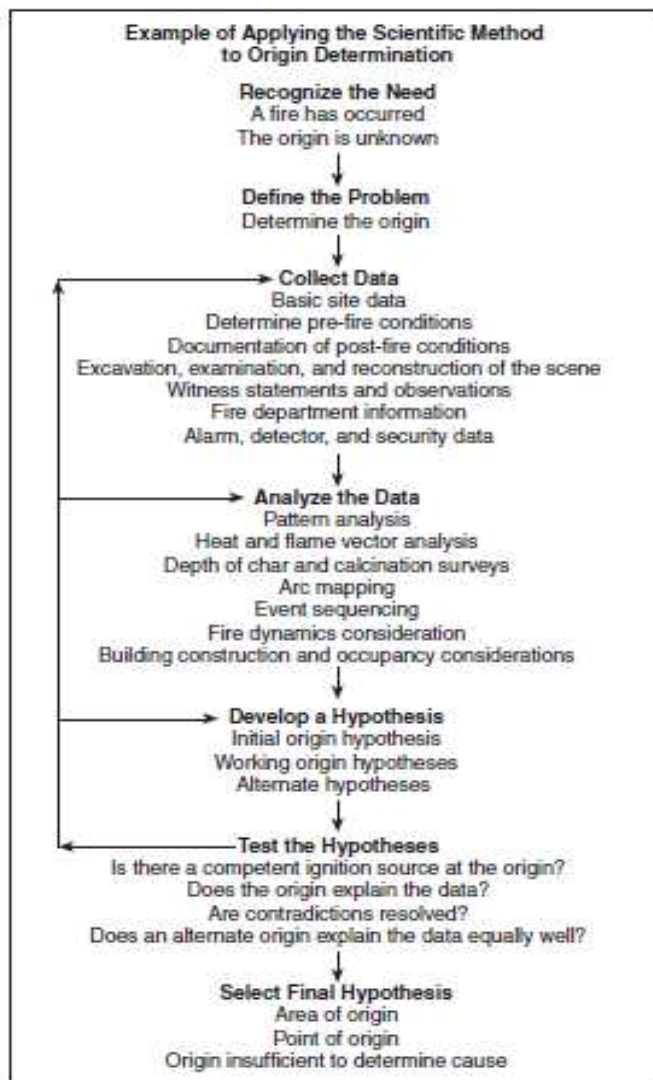
143 L.Ed. 2d 238, 252 (1999). Opinion testimony by the expert will likely be inadmissible if “connected to the existing data only by the ipse dixit of the expert.” *Gen’l Electric Co. v. Joiner*, 522 U.S. 136, 146, 118 S. Ct. 512, 519 (1997).

An expert’s opinion should be excluded where it consists of a summary and inferences the jury could have reached independently of expert testimony. *U.S. v. Benson*, 941 F.2d 598, 605 (7th Cir. 1991). It is the jury’s function to draw inferences from facts contained in the record; any expert testimony that seeks to supplant that function should be excluded. *Id.* at 604–605. Expert testimony should be excluded when it is founded on assumptions that are speculative or insufficiently supported by the record. *See Tyger Constr. Co., Inc. v. Pensacola Constr. Co.*, 29 F.3d 137, 142 (4th Cir. 1994); *Smithers v. C&C Custom Module Hauling*, 172 F. Supp. 2d 765, 771 (E.D. Va. 2000).

While the trial court’s evaluation is flexible, expert opinion must be both relevant and reliable. “Reliable” means based on the expert’s knowledge, not belief or speculation. *Oglesby v. Gen. Motors Corp.*, 190 F.3d 244, 250 (4th Cir. 1999). Proffered expert evidence with a greater potential to mislead rather than enlighten should be excluded. *Westberry v. Gislaved Gummi AB*, 178 F.3d 257, 261 (4th Cir. 1999).

In addition, to determine whether evidence will help the trier of fact, the Fourth Circuit has stated that “a judge must be mindful of other evidentiary rules,” particularly Federal Rule of Evidence 403. *U.S. v. Dorsey*, 45 F.3d 809, 813–19 (4th Cir. 1998). Rule 403 warrants the exclusion of evidence “if its probative value is substantially outweighed by the danger of unfair prejudice, confusion of the issues, or misleading the jury” The Supreme Court has stated that a trial judge must be particularly concerned with Rule 403 for expert testimony because of the difficulties inherent in evaluating expert evidence. *See Daubert*, 509 U.S. at 595; *see also United States v. Lester*, 254 F. Supp. 2d 602, 607 (E.D. Va. 2003) (noting that expert testimony can mislead the jury because the jury may attach more significance than is reasonably warranted).

The prevailing industry standard by which fire cause and origin opinions are judged is NFPA 921. Among other things, NFPA 921 requires that the investigation be conducted according to the systematic approach known as the scientific method. The general process is shown below in **Exhibit 10**, National Fire Protection Association (“NFPA”) Standard 921, Ch. 17, Fig. 17.2 (2011). During the investigation process, the investigator must take care to avoid premature conclusions, which result in expectation bias—a well-documented phenomenon in which the premature conclusion dictates the investigator’s “investigative processes, analyses, and, ultimately, conclusions, in a way that is not scientifically valid.” **Exhibit 11**, NFPA 921, § 4.3.8. A closely related error is confirmation bias, whereby the investigator conducts testing to prove, rather than disprove, his hypothesis. **Ex. 11**, § 4.3.9. Particularly with regard to cause and origin questions, the investigator must adhere to the scientific method by considering and weighing all the available data, developing and testing hypotheses, retesting hypotheses, and only then coming to a final hypothesis. An example of that method applied to origin investigations is below.



Ex. 10, NFPA 921, Chapter 17 (Figure 17.2).

Interviews with witnesses are an important part of the investigator's work under NFPA 921. However, because human testimony can be incorrect or faulty, the investigator who uses witness statements and/or conducts interviews must "evaluate the quality of the data obtained from the witness at the time of the interview." **Exhibit 12**, NFPA 921, Ch. 13.4.1.2; **Exhibit 13**, NFPA 921, Ch. 16. Further, the investigator should document all interviews carefully. **Ex. 12** at 13.4.3.

In cases where a party attacks a cause and origin opinion using a *Daubert* motion, courts often use NFPA 921's standards to decide whether the expert's opinions are sufficiently grounded in the scientific method to pass muster under *Daubert*. See, e.g., *Tunnell v. Ford Motor Co.*, 330 F. Supp. 2d 731, 734 (W.D. Va. 2004) (adopting the magistrate judge's report and recommendations

involving a *Daubert* challenge and NFPA 921). If the cause and origin expert's investigation or opinion fails to meet NFPA 921's scientific method standards, it fails under *Daubert*. See, e.g., *Fireman's Fund Ins. Co. v. Tecumseh Wood Prods. Co., et al.*, 767 F. Supp. 2d 549, 555 (D. Md. 2011) (excluding an expert's cause and origin opinions and noting that "[n]either Plaintiff nor [the expert] describe any attempts to gather data or create conditions that might falsify his explanation, which is what testing, in its scientific sense, means.")

B. SCHLOSS AND MCGINLEY'S CAUSE AND ORIGIN OPINIONS FAIL TO MEET THE STANDARDS OF FRE 702, DAUBERT, AND NFPA 921.

a. McGinley

Patrick J. McGinley is a professional fire cause and origin expert based in Philadelphia. His opinions are contained in a report dated September 27, 2013. He lists six general opinions in his report. **Ex. 2**, 5–6. His chief opinions regarding cause and origin of the explosion are that (a) the explosion began in the external baghouse, and (b) it was most likely caused by a spontaneous combustion (also known as an "exothermic reaction") caused by interaction between aluminum dust and water vapor condensate. *Id.*, 6.

For his investigation, McGinley conducted an initial walkthrough of the Federal-Mogul facility on February 11, 2011. **Ex. 5**, 25–27. During the walkthrough, McGinley examined and photographed equipment and structures. (*Id.*) McGinley conducted no measurements or other calculations, and he estimates the walkthrough inspection lasted four or five hours. *Id.*, 27. At some point, McGinley spoke by telephone with Jeffrey Hodges and Danny Collins, the LCM Corporation job supervisor for the Federal-Mogul job. *Id.*, 33–34. McGinley "didn't sit down and take an interview or record an interview or anything," during those conversations, and he does not recall ever speaking to the other two Plaintiffs. *Id.*, 34. McGinley also reviewed various documents, as indicated in his report. **Ex. 2**, 2–4. McGinley does not provide any calculations or measurements anywhere in his six-page report.

1. McGinley's Opinions Fail NFPA 921 Standards.

The fatal flaw in McGinley's methodology is that he prematurely reached a conclusion as to the origin of the explosion. McGinley reached this conclusion based wholly on (1) Hodges' physically impossible description of a fireball coming from beyond the back-draft damper, and (2) the video footage of the explosion. Once he reached that conclusion, he made no effort to disprove it as was his duty under NFPA 921, and he allowed it to dictate the outcome of his investigation, violating NFPA 921 §§ 4.3.8 and 4.3.9. Indeed, the only specific reasons McGinley could articulate as to why he discarded the theory that the explosion started inside the factory ducts were Hodges' testimony, the video, and a faulty assumption that the ductwork would have exploded even though it lacked a necessary element of dust cloud explosions—confinement.

McGinley's Origin Opinion:

McGinley's origin opinion fails NFPA 921's standards for a number of reasons. First, his ready adoption of Hodges' testimony ignores glaring internal contradictions that render Hodges' testimony unreliable and irrelevant to the question of origin. **Ex. 9**, ¶¶s 12–13. McGinley admits that Hodges' description of the damper as pivoting at the middle is wrong (**Ex. 5**, 62), admits that Hodges could not have seen over the top of the damper (*Id.*, 63), and admits that when a witness' statement contradicts physical evidence or the laws of physics the statement should not be included as basis for the investigator's hypothesis. *Id.*, 41.

Despite those admissions, McGinley accepts Hodges' impossible testimony and adopts it as one of the two chief bases for his origin opinion. He fails to account for the errors in Hodges' testimony, simply saying "the eye witness testimony as to what Mr. Hodges saw is what it is." *Id.*, 72. He goes on to claim that there was not "a fact or piece of evidence that justified the elimination of that information." *Id.*, 48. This statement ignores McGinley's duty to independently test — meaning "attempt to disprove" — Hodges' testimony. McGinley seems to be arguing that he can dismiss all of the errors in Hodges' statement without affecting the validity or weight that should be

given to Hodges' statement as a piece of data. That is incorrect for multiple reasons.

First, Hodges' errors go to the essence of his testimony. Hodges states that he could see past the damper to the fireball, but his description of the damper is completely incorrect. What Hodges describes as the damper more closely resembles what the duct would look like with three to five inches of more or less flat dust buildup – a flap covering the bottom half of the damper and hinging at the middle. Moreover, Hodges admits that what he saw was a fleeting image – taken in a fraction of a second. McGinley himself agrees that witness statements are often utterly wrong, especially when given by someone with self-interest in the outcome of a fire investigation (**Ex. 5**, 137), but he refuses to test or even question the quality of this one. In the end, in order to assert that Hodges saw beyond the damper, one has to accept that Hodges actually saw the damper. Because Hodges does not describe anything near what the physical structure of the damper was and is, McGinley cannot say with certainty that Hodges in fact saw the damper.

McGinley's acceptance of Hodges' statement also ignores the issue with the propped open damper — if the damper was propped open by aluminum dust, and the dust is not transparent or invisible, there is no way to see past the damper to the fireball Hodges thinks he saw beyond it. McGinley explains this issue with Hodges' testimony thusly:

Q How is it that if [the damper]'s being blocked by a physical substance that you can't see through, you can somehow see beyond the flap and the physical substance?

A Well, it would depend on the geometry of the physical substance. You could have a flap resting on accumulated material. There is no testimony or no information that this material was neatly falling into a pile of equal dimension on all sides. That pile of debris could have been, you know, like an EKG that one end of it was much higher than the other and that's the part that's holding, and there was a clear line of sight through there simply because of the air movement, et cetera when the duct was operating.

Ex. 5, 67–68. The issue here is that McGinley simply assumes the best possible world of facts must exist to support Hodges' statement, rather than critically evaluating Hodges' testimony. There may be no direct testimony that the dust buildup was flat (although Hodges suggests it was in his

deposition at page 41 – see **Exhibit 6**), but there is also no testimony that it was not flat. Moreover, one can readily expect that the suction of the baghouse fan across the top of the dust buildup would act over time to even the dust out even as it accumulated. McGinley has come up with a scenario in which Jeffrey Hodges looks for an instant down a 40 foot long section of 14 inch diameter pipe, is somehow able to maintain depth perception across that limited scope to the end, and sees underneath and through the damper and to the side of an uneven dust pile to the fireball beyond. He comes up with this scenario to explain Jeffrey Hodges’ statement that he saw over the top of the damper in a manner that is physically impossible. McGinley has engaged in an exercise of creative license, not scientific method. **Ex. 9**, ¶¶s 12–13.

Regarding the video footage, McGinley claims that it “clearly shows the initial flash of light and blast occurring outside the building exterior wall, not inside.” **Ex. 2**, 5. As discussed above, that interpretation is simply incorrect, given the shadows caused by the light and the glass shards appearing after the initial explosive event, among other things. McGinley provides no explanation of how he came to that interpretation in his report, and at deposition suggested that the shadow to the right of the garbage can was in fact a shadow being cast from the kick-plate attached to the external wall. **Ex. 5**, 113–4. McGinley also suggests that no testimony supports the notion that a bright white light occurred within the building. *Id.*, 115. That argument ignores the Plaintiffs’ own testimony about being engulfed in a flash of flames. Further, as any amateur videographer knows, all that is necessary to white out a camera is a light source that exceeds the camera’s light sensor capacity. That phenomenon occurred when the initial blast of flames engulfed the Plaintiffs. McGinley fails to show how his interpretation of the video is superior or even possible, given the analysis conducted by Dr. Roby.

This failure to retest his hypothesis and the data McGinley claims support it is especially problematic when one considers the physical layout of the plant and the structures outside.

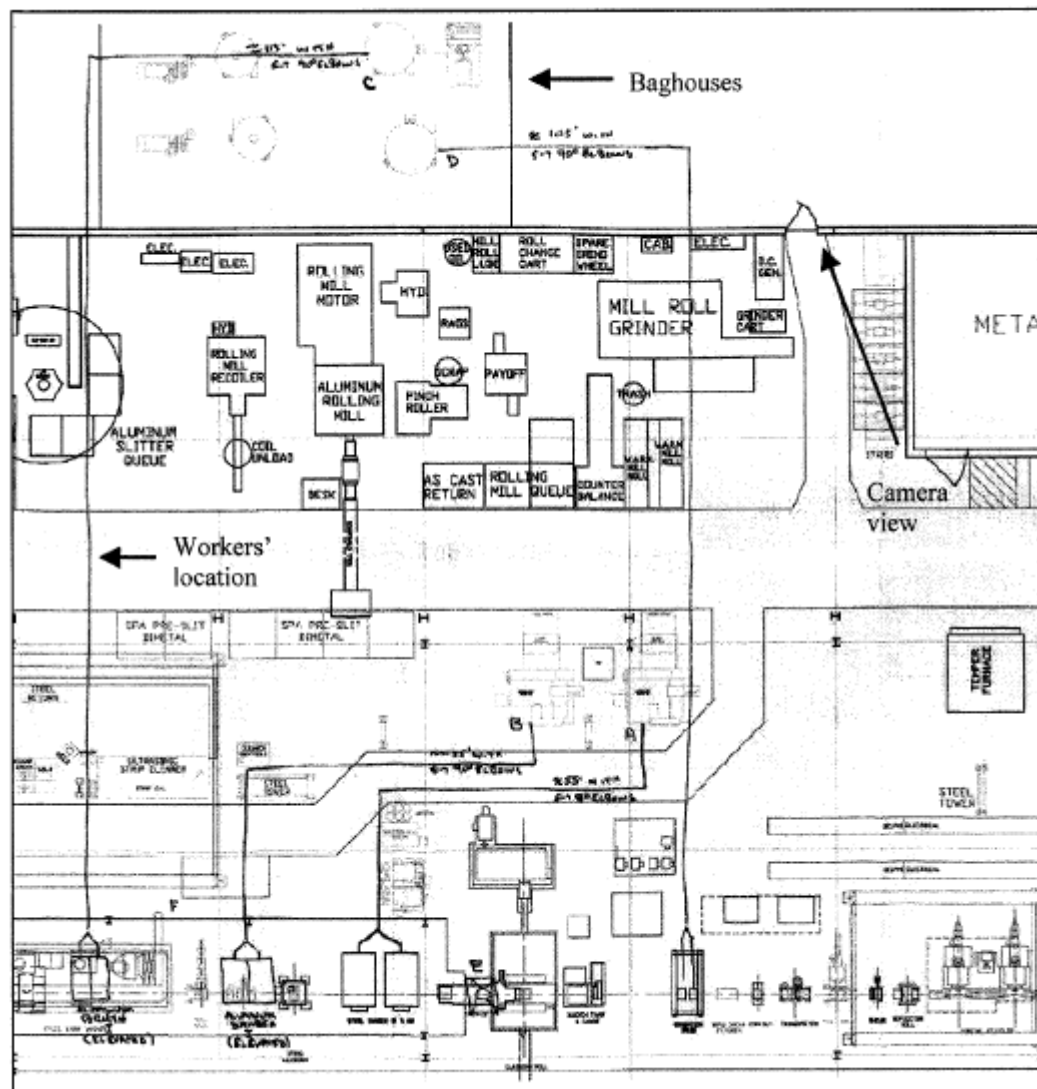


Figure 3. Floor plan of the plant area and baghouses. Annotations in red added by CSE.

Ex. 8, 12, fig. 3. As this schematic drawing shows, McGinley's theory that the light from the external blast is the first white-out on the video footage would require the light from the explosion to bend around corners and take 90 degree angles before finally infiltrating the camera screen and whiting out the frame. No law of physics supports that interpretation. **Ex. 9**, ¶¶s 14–16.

McGinley's origin opinion also fails to properly account for a much more plausible theory — that the explosion initiated in the ducts, where the Plaintiffs were emitting static sparks off of the end of their vacuum. McGinley agrees that all elements necessary for a fire existed in the ducts. **Ex. 5**, 77. Nevertheless, McGinley says he discarded that alternative theory for three reasons. First, he indicates that the fire could not have started in the ducts because Jeffrey Hodges' description of

the fireball coming at him from beyond the flame arrestor “puts [the origin] outside the building in the baghouse.” **Ex. 5**, 47–8. This use of Hodges’ testimony is a classic example of expectation bias. Because the alternative theory doesn’t meet his prematurely formed conclusion, McGinley discards it as inconsistent with the same unreliable source that led to his premature conclusion. **Ex. 11**, § 4.3.8.

Second, McGinley argues the security video footage showed “that the initial pop or the initial light burst . . . occurred outside the building . . .” **Ex. 5**, 46. For the reasons articulated above, this is also a result of his expectation bias, it defies laws of physics involving transmission of light, and he has failed to provide meaningful analysis as to how he reached that interpretation.

Third, McGinley claims that, had the explosion originated in the ducts themselves, it “would have resulted in a substantial deformation of the duct work itself and most probably would have caused it to separate at the seams resulting in a much more physically damaged configuration than was experienced in this event.” **Ex. 2**, 5. Essentially, McGinley argues that an explosion that began in the ducts could not have occurred without blowing the ducts up themselves. This ignores the fact that the ducts (1) had an initial opening at which the deflagration could initially vent (the mouth where the Plaintiffs were standing), and (2) have significant hoop-strength due to their cylindrical shape, and thus could withstand a deflagration moving through the ducts out into the baghouse. **Ex. 8**, 10.

McGinley’s arguments also ignore the fact that the ducts moved toward the outside of the plant as a result of the blast, not away. If the initial blast had moved inward from the baghouse direction, the opposite result would have occurred. *Id.* Photo evidence of this phenomenon is uncontroverted:



Ex. 8, 6, fig. 1 (modified with text and arrow.) At deposition, McGinley discounted the movement of the ducts toward the baghouse out of hand, claiming that the ducts would have had to push the baghouse outward itself in order to move in that direction. **Ex. 5**, 101–2. That explanation ignores the fact that a 90-degree turn to the right occurs in the duct outside the building. The baghouse is not in the path of the duct moving outward, and the ducts clearly moved in that direction as a result of the explosion. McGinley simply fails to account for this physical evidence.

When one examines each of McGinley’s reasons why he discarded the theory that the explosion began in the ducts, it becomes clear that he reached his conclusion on origin based on Hodges’ testimony, then disregarded evidence contradicting his premature origin conclusion. In short, McGinley engaged in expectation bias, failed to follow the scientific method, and thereby violated NFPA 921.

McGinley’s Cause Opinion:

As a result of his premature origin conclusion, McGinley then arrives at his incorrect and physically impossible cause opinion that the explosion started due to a spontaneous combustion or

exothermic reaction due to temperature differentials. **Ex. 2**, 5–6, Op. 6. McGinley’s report states:

Giving consideration to the fact that the surveillance video and the only eyewitness testimony available, that being Mr. Hodges’ description of the inception of the fire and explosion, both place the event on the exterior of the structure and giving consideration to the fact that the bag house, no doubt, exploded, it is my opinion that the origin of this event was within the baghouse *and the most probable cause* of the event was an exothermic aluminum dust and water combination which led to a heat build up within the non-operating bag house and ignition of the airborne particulate that exploded within the bag house itself.

Id., p. 6 (emphasis added). McGinley never conducted any testing or calculations to disprove his cause opinion. (**Ex. 5**, 166–178) The temperature conditions he mentions would have been present hundreds or thousands of times prior to December 31, 2010, but no explosion event had occurred. He claims the difference between December 31, 2010 and any other moment in the seven year lifespan of the East Bonding Line is that on December 31, 2010, the baghouse was shut down and the “exhaust flow” was shut. *Id.*, 84–5. McGinley has provided no analysis or other evidence

Moreover, this cause opinion ignores the fact that condensation of water vapor in the baghouse air could only have occurred if the air temperature dropped below its dew point. **Ex. 8**, 9. At deposition, McGinley responded to the dew point issue by arguing that the absolute humidity of the outside environment would be different than in the baghouse, but he gives no analysis, literature, or other support for that argument. **Ex. 5**, 101. The explosion occurred early in the day, it was cold and snowy outside, and he has given no rational reason why the temperature in the baghouse would be different than the external environment temperature, particularly given that the baghouse was a steel structure. **Ex. 9**, ¶ 18. At any rate, McGinley has provided no analysis or testing involving temperatures and dew point other than listing what the low temperatures were on December 30 and 31, 2010. **Ex. 2**. The lack of testing renders his cause opinion faulty under *Daubert* and NFPA 921. Even if he was correct, the baghouse would have been lower than the freezing point for water. McGinley gives December 30–31 temperatures as 17 and 25 degrees, respectively. *Id.* If the temperature was below 32 degrees, any water vapor condensation would occur in the form of frost, not water. Of course, McGinley has not tested his theory sufficiently so

he has not said whether frost and aluminum dust can create an exothermic reaction. It cannot. **Ex. 9**, ¶ 18.

McGinley does not know whether the hydrogen gas that would have formed in the event of an exothermic reaction would have been the initial ignition source. **Ex. 5**, 86. He did no testing to determine whether hydrogen would have been a factor. *Id.*, 141, 143–4. Though both the report and his expert designation state his cause opinion as “the most probable” cause of the explosion, McGinley admitted at deposition that he could not express that cause opinion as a probability — in other words, within a reasonable degree of engineering probability. *Id.*, 98–9. The problem with McGinley’s premature origin hypothesis thus becomes evident: it leads him directly to the impossible cause opinion stated above. Moreover, McGinley has not described any effort whatever to disprove his opinions — “which is what testing, in its scientific sense, means.” *Tecumseh Wood Prods. Co.*, 767 F. Supp. 2d at 555.

As a result of the premature conclusions reached by McGinley, he discards valuable and extensive physical evidence that clearly shows the explosion began when the Plaintiffs’ vacuum hose gave off a static spark that ignited the aluminum dust. He admits that static electricity was a viable ignition source (**Ex. 5**, 121–2), and that all the other necessary elements for a fire were present in the ducts (*Id.* at 74–5.) He even admits that the Plaintiffs’ activities “contributed to the creation of the atmosphere whereby this event could occur.” *Id.*, 32. But because he has reached a conclusion as to origin and cause prematurely, he discards or discounts the video evidence (both indicating the light source was inside the building and that glass shards came from the outer vestibule after the initial blast), photo evidence of the ducts moving towards the baghouse, and more.

Moreover, nowhere in McGinley’s six page report or deposition does he provide any evidence that he attempted to disprove his hypothesis by testing. He simply gives *ipse dixit* statements that his methodologies were sound. His investigation fails the scientific method, and his

cause and origin opinions should be excluded from testimony.

b. Schloss

Martin Schloss is an engineer with a specialization in baghouse design, based in Greenville, South Carolina. Schloss' opinions are rendered in a report dated September 27, 2013. **Ex. 3.** Most of Schloss' report is dedicated to setting out bases for the Plaintiffs' allegations against the other defendants in this case. He does, however, provide a cause and origin opinion in Section VII of his report.

Schloss' Origin Opinion:

Schloss' opinion suffers from many of the same defects as McGinley. He begins by extensively citing Hodges' testimony. Schloss essentially admitted at deposition that the critical piece of evidence upon which he founded his opinion is Hodges' testimony. **Ex. 4**, 71–2. Schloss asserts that he “tested” Hodges' statements by examining the duct work and determining that it did indeed contain burnt aluminum material. **Ex. 3**, 26. Yet nowhere in his report does Schloss even mention the physical impossibilities in Hodges' testimony. Moreover, to the extent Schloss confirmed that the pipe did at one point contain aluminum material, that confirmation is irrelevant to the purpose for which he depends on Hodges' testimony. Of course, no party disputes that there was an aluminum buildup in the duct. That buildup is the express reason why Federal-Mogul hired LCM Corporation in the first place.

At deposition, Schloss admitted it would be difficult for him to actually test the accuracy of Hodges' testimony about the fireball without obtaining a diagram of the duct — something which Schloss did not do. **Ex. 4**, 86–87. Schloss' evaluation of Hodges' testimony does not constitute “testing” the accuracy of that testimony for the purposes of NFPA 921 or *Daubert*. See, e.g., *Tecumseh Wood Prods. Co., et al.*, 767 F. Supp. 2d at 555. While Schloss agrees that he had a responsibility under NFPA 921 to test witness statements before unequivocally adopting them into his hypothesis (**Ex. 4**, 86–7), he failed to meet that responsibility here. Moreover, Schloss agrees

that the pressure wave coming from the baghouse explosion would have stirred up the dust in the ducts and preceded the actual flame. *Id.*, 119-120, 163. If the pressure wave was creating turbulence ahead of the fireball coming from the baghouse and stirring up a thick cloud of dust, Hodges could not have seen through the dust cloud and past the damper to see the fireball. Schloss never addresses this issue, which is another result of his failure to test his hypothesis against other available data.

Like McGinley, Schloss also relies heavily on the surveillance video footage in his origin opinion. **Ex. 3**, 27–28. Schloss offer further discussion of the video than does McGinley, but his opinion rests on a similarly improbable and implausible interpretation of the footage. He indicates that the first flash engulfs the right side of the frame, which he would expect from an explosion initially occurring outside at the baghouse. *Id.* Again, if the initial flash occurred outside it could only potentially show in the vestibule doorway and would not totally engulf the frame of the camera. Analysis of the contrast on the video indicates that the flash did not originate outside the door. **Ex. 8**, 15. Additionally, the shadowing indicates that the flash came from the left of the field of view, where the workers were vacuuming inside.

Schloss also suggests that in the secondary flash shown in the video, the glass door opens slightly. He provides no calculations or other analysis of his explanation. As discussed and calculated by Richard Roby, however, the pressure wave from the initial blast that burned Hodges and Bonds would have shot out of the duct past the workers, rebounded off the far walls of the plant, and pushed out the glass door less than a second later, which matches the timing of the video. **Ex. 8**, 16. As also is explained by Roby, there is simply no way that the light flash from the external explosion at the baghouse (which no one denies occurred) could have caused the flashes that are shown on the surveillance video. *Id.* Schloss and McGinley ask the Court to believe that the light from the exterior blast could have entered the outer vestibule door at one angle, changed directions, entered into the inner vestibule door to the plant, and somehow illuminated the entire

screen of the video camera. Again, Schloss has not accounted for the glass shards that appear later in the sequence than they would have had the initial blast occurred in the baghouse. The Court is not required to suspend its disbelief in order to decide the merits of expert opinions and methodology.

Like McGinley, Schloss discards the possibility that the explosion began in the interior ducts based on his reliance on Hodges' suspect testimony and Schloss' interpretation of the security video footage. **Ex. 4**, 30. Schloss gives two additional reasons: (1) that the larger particles of aluminum, which he describes as "less volatile," would have stayed in the ducts while the smaller "highly explosive particles" would have been conveyed into the baghouse; and (2) that the ducts would provide a less ideal environment for a dust cloud to form than the baghouse. *Id.*

These purported reasons fail to provide sufficient rationale to discard the more plausible theory that the explosion began in the ducts. If any dust dispersion was present in the ducts, the static sparks that were being emitted (which Jeffrey Hodges witnessed with his own eyes) could ignite that dust. Further, Schloss gives no calculations as to what the relative size of the dust particles in the duct would or could have been, and at any rate he nowhere claims that the larger particles could not have been ignited. **Ex. 4**, 235–6. His decision to discard the hypothesis that the explosion originated in the ducts inside the Federal-Mogul plant is a product of his premature conclusions, confirmation bias² and expectation bias, in violation of NFPA 921.

Schloss' Cause Opinion:

Schloss' cause opinion is similar to McGinley's: he claims the explosion most likely was caused when aluminum fines in the baghouse interacted with water vapor condensate to create an exothermic heat reaction. **Ex. 3**, 31–32. His opinion does not withstand scrutiny. First, while it is true that an exothermic reaction is a phenomenon that can occur, Schloss provides as support for his opinion citations from NFPA 484 that have nothing to do with the facts of this case. They involve

² Schloss did not even recognize the concept of confirmation bias when asked at deposition (**Ex. 4**, 96), though NFPA 921 clearly describes it.

duties of a premises owner involving the cleanup of wet powder after a fire has been extinguished by water. **Ex. 8**, 20. Moreover, Schloss' opinion suffers from the same infirmities caused by expectation bias as McGinley's and is not supported by the facts of this case.

As described above and in Dr. Roby's report, no exothermic reaction would have occurred on the day of the explosion because the external temperature outside the plant was above the dew point, and water vapor condensate cannot form at temperatures above the dew point. **Ex. 8**, 20. Schloss argues that the equipment in the factory itself would have raised the relative humidity of the interior structure, but he did no calculations of the relative humidity and at any rate does not know how long (or even if) that equipment was shut off. **Ex. 4**, 40–44. Just as in McGinley's case, Schloss fails to account for the fact that any condensation coming from the air in the factory would occur in the form of frost. Frost does not cause exothermic reactions when mixed with aluminum fines. Further, while Mr. Schloss is unable to say what would have actually ignited (either the hydrogen byproduct of the exothermic reaction or the aluminum dust itself), both Mr. Schloss and Mr. McGinley have provided zero information on what would have caused such ignition of the hydrogen gas or aluminum dust in the baghouse. Neither expert has shown any analysis, calculations, experiments, modeling, or anything else that would demonstrate the potential of the exothermic reaction. This failure to test their hypothesis violates the scientific method.

A further error in Schloss' opinion is that it fails to account for why the baghouse did not explode in the seven or eight years of uneventful operation that preceded the explosion:

Q Okay. Were there any conditions that were present on December 31, 2010, that were different than any other day that it had been operating up until then?

A I don't have that information.

Ex. 4, 27. While he cannot come up with a reason why it did not occur in the previous seven or eight years of semi-continuous production, Schloss is certain that the explosion had nothing to do with the Plaintiffs standing at the ducts using an ungrounded, industrial vacuum and extension that

was giving off sparks:

From my analysis of the explosion and of the equipment and the videotape and the – you know, based on all of those things and where I determined the explosion originate, it would have made no difference if they were working on it or not working on it.

Id., 26–27.

The problems with the expert opinions forwarded by McGinley and Schloss stem from their flawed methodologies. Neither McGinley nor Schloss has provided any sort of calculations or diagrams or measurements or anything else that would suggest they followed the scientific method. As the 4th Circuit has made clear, “nothing in either Daubert or the Federal Rules of Evidence requires a district court to admit opinion evidence that is connected to existing data only by the *ipse dixit* of the expert.” *Smith & Nephew, Inc.*, 259 F.3d at 203 (*quoting Kumho Tire*, 526 U.S. at 157). Moreover, when their rationale for both cause and origin opinions is closely inspected, it becomes clear that both Schloss and McGinley prematurely reached the conclusion that the explosion had to have started in the baghouse, and simply discarded any evidence or hypotheses that contradicted that conclusion, in violation of NFPA 921.

Moreover, both experts failed to meaningfully test the highly suspect and factually impossible testimony from Jeffrey Hodges, a failure which independently violates NFPA 921. Because of the errors and violations of NFPA 921, this proffered testimony is unfounded and would mislead the jury. *See, e.g., United States v. Lester*, 254 F. Supp. 2d 602, 607 (E.D. Va. 2003) (noting that expert testimony can mislead the jury because the jury may attach more significance than is reasonably warranted). These opinions do not meet the standards articulated by NFPA 921 or Daubert, and they should be excluded.

C. CONCLUSION

Jeffrey Hodges’ testimony about the fireball is unreliable, physically impossible, and self-serving. That testimony is the foundation for the opinions of Schloss and McGinley. At their core, both these experts make an improper appeal to authority: “I am an expert. I believe Jeff Hodges’

testimony. You should too.” Neither McGinley nor Schloss have tested their hypotheses under NFPA 921. Schloss’ theory fails to explain how a necessary element of a dust cloud explosion was present in the baghouse, where he claims the explosion started. For his part, McGinley admits he can’t say that one cause of the explosion is more likely than another.

Lastly, both McGinley and Schloss ignore the overwhelming physical evidence indicating the explosion was caused by the negligent actions of LCM Corporation and the plaintiffs. The underlying rationale for ignoring that evidence is that it contradicts Hodges’ testimony. Hodges’ unreliable, physically impossible testimony thus serves as both sword and shield. It provides the basis for Schloss’ and McGinley’s opinions, and it defeats any evidence to the contrary. This evidentiary cherry-picking by both experts fails the scientific method and fails to meet NFPA 921. The Court should exclude their opinions from evidence.

WHEREFORE, Federal-Mogul Corporation respectfully requests that the Court exclude the cause and origin opinions of Patrick J. McGinley and Martin Schloss, and for such further relief as the Court deems appropriate.

FEDERAL-MOGUL CORPORATION

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